JÖNKÖPING UNIVERSITY
Jönköping International Business School

PROGRAMME SYLLABUS
Preliminary, not confirmed

Master in Engineering Management (One Year), 75 credits

Master in Engineering Management (One Year), 75 högskolepoäng

Programme Code:	JAEM4	Programmestart:	Autumn 2027
Confirmed:		Education Cycle:	Second-cycle level

Title of Qualification

Degree of Master of Science (60 credits) with a major in General Management

Filosofie Magisterexamen med huvudområdet General Management

Programme Overview

Programme aims

This programme aims to contribute management-skilled engineers to engineering-focused companies of all sizes. Building on JIBS' focus areas, the programme emphasizes ability to lead change and innovation in different settings.

Adding knowledge and understanding about business management to the participants' pre- existing engineering knowledge, the programme graduates persons who are well qualified for leadership-, project management-, and consultancy positions.

To ensure that graduates have a solid foundation for careers with managerial assignments, the programme provides fundamental knowledge and understanding in core areas of business and management.

Objectives

General aims

Second cycle education shall essentially build on the knowledge students acquire in first cycle education or corresponding knowledge. Second cycle education shall involve a deepening of knowledge, skills and abilities relative to first cycle education and, in addition to what applies to first cycle education, shall:

• further develop the students' ability to independently integrate and use knowledge,
• develop the students' ability to deal with complex phenomena, issues and situations, and
• professional activities that demand considerable independence or for research and development work.

Programme specific learning goals

Knowledge and Understanding
Graduates of the programme will be able to:

1. demonstrate knowledge and understanding in general management, including broad knowledge in how business and management principles apply to engineering-focused companies, as well as specialized knowledge in leading groups of people through change and innovation;
2. demonstrate insight into current research and development work related to engineering management; and
3. demonstrate specialized methodological knowledge for general management.

Skills and Abilities
Graduates of the programme will be able to:

4. Integrate knowledge and analyze, assess, and deal with complex phenomena, issues, and situations associated with engineering management, even with limited information.
5. Independently identify and formulate relevant questions associated with engineering management, as well as to plan and - using appropriate research methods - undertake advanced tasks within predetermined time frames.
6. In speech and writing, clearly report on and discuss their conclusions related to engineering management issues as well as and the knowledge and arguments on which these conclusions are based, in dialogue with different audiences.
7. Participate in research and development work or work in other types of advanced operations associated with engineering management.
8. Demonstrate applied skills related to business analytics, consultancy, and project management in engineering-focused contexts.

Judgement and Approach
Graduates of the programme will be able to:

9. Make assessments within the area of in general management, taking into account relevant scientific, societal, and ethical issues, and elaborate ethical aspects in research and development work.
10. Elaborate the possibilities and limitations of science/research, its role in society, and people's responsibility for how it is used.
11. Identify their personal need for further knowledge and to take responsibility for developing their knowledge.

Mission driven goals
Graduates of the programme will be equipped to contribute to the advancement of business practice in a global environment, with particular emphasis on aspects of Entrepreneurship and Renewal.

Corresponding Objectives:
Graduates of the programme will be able to

12. Lead groups of people through change and innovation, with specific focus on engineering-focused companies.

The above is in accordance with the intended learning outcomes set for a one year Master's degree in the Swedish Higher Education Ordinance and JIBS mission.

Contents

The master programme in Engineering Management (One Year) provides a specialized education in general management for participants with a bachelor's degree in engineering, who bring substantial knowledge and skills in an engineering discipline from their undergraduate studies. It is designed to meet the demand for employees who combine an understanding for the engineering profession with managerial knowledge, skills and abilities. Such persons are important for project- and continuous change management in engineering-focused companies of all sizes.

The programme includes a pre-study course (Introduction to business), four modular courses, and an internship. Each course is designed to capture an overall theme through a set of interrelated subjects.

Pre-study course: Introduction to Business. With students having varied and primarily non- business backgrounds, this pre-study course builds a common foundation for all participants, contextualizing business operations and management in the wider economic and societal context. The course is offered online and facilitates an opportunity for participants to start their learning journey even before arriving to JIBS.

The course consists of the following five subjects: *Economics*, introducing students to how markets function and influence business. *Business and society* - introducing students to the interconnectedness between society and business. *Business organizations and ownership* - introducing students to the different ways of setting up, owning, and operating businesses. Finance and business models – introducing students to how businesses are financed. *Sustainability & SDGs* – introducing students to sustainability and SDGs, elaborating the role of business in sustainable development.

Foundations of Engineering Management. This course familiarizes students with key components of business administration, to enable their managerial roles and positions in the future.

The course consists of the following four modules: *Organization theory* – including organizational theory, challenges and opportunities in project-based organizations, characteristics of organizational behavior and its implications for managing organizations. *Strategic management accounting* – including theoretical and practical knowledge in accounting and finance in an industrial and engineering business setting. *Marketing & supply chain for managers* – including the basic concepts and processes of marketing management and applying a system's and global supply chain perspective on engineering business. *Business analytics* – including methods for informed and data-driven decision making in business, using big data and artificial intelligence and reflecting on ethical consequences of using such data. To facilitate integrated learning and increased understanding for the interrelatedness of the core functions in business administration, the course closes with a business simulation game.

Leading with People. This course is composed to develop skills and competencies that are necessary for leadership and/or consultancy roles. It provides overview of core topics as well as practical tools for leading and for managing through uncertainty and change in engineering contexts.

The course consists of the following four modules: *Leadership* – including different leadership styles and perspectives, and the role of leadership for collaboration and co-ordination in complex situations. *Managerial communications* – including to strengthen abilities for interpersonal, cross-functional, and cross-cultural communications, as well as the art of visual and oral presentation and communication for change, including to understand the keys to persuasion, negotiation, and speaking confidently. *Uncertainty and change management* – including to develop abilities for recognizing and leading through change and uncertainties, in the unstructured nature of business development (following from e.g. economic, technical, organizational, and human issues). Providing knowledge about what makes organizations change, how they change, and what it takes to manage such change. Learning about processes for implementing change and understanding responses to change, at individual as well as organizational level. *Key elements to consultancy* – including keys to professional consultancy reports, techniques to evaluate briefs and consultancy proposals, and communication strategies for consulting work.

Boosting Innovation. This course facilitates an entrepreneurial mindset and provides sufficient knowledge and understanding about entrepreneurship, innovation, strategy, and project management for participants to engage in and lead innovation projects, in engineering contexts.

The course consists of three modules: *Strategy - analyses and formulation* – including to analyze a firm's competitive environments and how to sustain competitive advantage, defining appropriate goals and designing strategy. *Entrepreneurship and innovation* – introducing students to the theory and processes of entrepreneurship and innovation and allowing students to participate in an extensive innovation project in collaboration with business. *Project Management* – including project methodology and frameworks, and project financial management.

Investigating and Reporting. This course provides students with sufficient knowledge, skills, and experience to engage in research and development work. Through an independent project it also affords an opportunity to niche the degree, with an in-depth, empirical exploration of a topic suggested by the student.

The course consists of two modules: *Research methods for General Management* – training students in how to plan, perform and report on scientific investigations from a management perspective, stressing the importance of ethics in business and research. *Master thesis in General Management* – allowing students to in-depth investigation and independent study of a topic where a management query is contextualized in an engineering context. The 15 ECTS master thesis is one demand to obtain the Degree of Master of Science (60 Credits).

Internship in Engineering Management. This final course provides an opportunity for experiential learning, with students either engaging as participants in a business project or accepting a stand-alone consultancy assignment.

The modular courses are designed to enable progression throughout the programme, moving from general understanding of the business context to developing relevant knowledge and understanding to develop managerial and leadership skills and competencies within that context. Within each course the subjects are also integrated and designed to facilitate a continuous and logical learning process from the student perspective.

To secure the practical relevance of the programme and make good use of the students' prior knowledge in engineering, projects with corporate interaction are included throughout the courses, incorporating engagement between students, practitioners, and faculty. This type of experiential and engaged pedagogy

affords training for students in working within diverse teams and ensure that the knowledge and skills learned through the programme can also be applied in practice.

The programme is open to students from around the world and is completely taught in English. JIBS' international environment – with faculty and students from many different countries – enables an international learning experience both in atmosphere and course content.

Courses

Course changes can occur, as long as they do not substantially affect the programme's content and learning goals.

Teaching and Examination

To pass a course, the student needs to fulfill all the course requirements. Examination will be executed by written exam, oral exam or term papers. Different methods of examination can be used within a single course. The student will be offered examination opportunities in accordance with document: Regulations and Guidelines for first, second and third cycle education at Jönköping University. Mandatory workshops and assignments can figure within the frame of the course.

All courses offered by JIBS will be graded according to the following six levels: A-E constitutes a pass and FX or F is equal to a fail. The grades Pass or Fail can also be used for selected examinations.

Entry Requirements

The applicant must hold the minimum of a Bachelor's degree (i.e the equivalent of 180 ECTS credits at an accredited university) with at least 90 credits in engineering or equivalent. Proof of English proficiency is required.

Continuation Requirements

This programme is a one year programme and therefore has no continuation requirements.

Qualification Requirements

To complete the programme Engineering Management (75 credits) and obtain the degree Master of Science (60 Credits) with a major in General Management, with a focus on Engineering Management, the student must complete: (1) the requirements for the Master of Science (60 Credits) with a major in General Management, (2) all mandatory programme courses as listed in the above contents section, or their equivalent, and (3) a Master thesis in General Management (15 credits) that covers a topic with relevance for Engineering Management.

To obtain the Master of Science (60 Credits) with a major in General Management, the student must complete the course requirements of at least 60 credits at the higher education level that were not used for the bachelor degree, with at least 45 credits overall in second-cycle courses and at least 30 of those second-cycle credits in general management, and furthermore a Master Thesis in General Management (15 credits) must be completed.

Quality Development

Our cooperation with JSA, the student organization, is crucial. This work is conducted on twolevels, programmes and courses.

Programme level

On the programme level student representatives for the programme are elected. The student representatives and the programme directors meet regularly to discuss courses and the progress of the programme. The representatives stay in contact with course coordinators to share the overall impression and student experiences from courses, in addition, the Programme Director leads quality assurance work together with a programme group (faculty) and an advisory board (corporate representatives).

Course level

On the course level, student evaluators and course coordinator meet shortly after the course has started. The purpose is to ensure that the course is working well and if necessary make minor changes. After each course is finished all students perform course evaluations on Canvas, and programme developers evaluate the course on the aggregate level and communicate with the programme director and course coordinator.

Other Information

Preparatory/foundation courses cannot be included/counted for the JIBS degree.

Additional information regarding the programme will be presented online before each application period.